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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,251	10/09/2003	Juha Lehtonen	2835-0143P	7510

2292 7590 08/04/2006

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EXAMINER	
NGUYEN, TAM M	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/681,251	LEHTONEN ET AL.	
	Examiner	Art Unit	
	Tam M. Nguyen	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9, 11, and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The objection to claim 5 is withdrawn by the examiner in view of the amendment filed on May 22, 2006.

The rejection of claims 2, 9, and 10 under 35 USC § 112 is withdrawn by the examiner in view of the amendment filed on

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stine et al.(US 5,847,252) in view of Lyman et al. (US 2,135,823).

The Stine reference discloses a process for producing a motor fuel component that comprises paraffins. The process comprises hydrotreating an olefinic stream obtained from a process in which butenes are dimerized. This olefinic stream contains (28 through C12 hydrocarbons. The hydrotreating is performed by passing the olefinic stream through a series of two reactors. Each hydrotreating reactor contains a catalyst such as a noble metal on an alumina support. The preferred reactors contain a fixed bed of catalyst. As shown in the figure, the reactants flow downward through the catalyst beds. It is clear that these reactors are trickle bed reactors. The effluent from the hydrotreating reactors heats the oligomerization zone feed. Conditions in the hydrotreating reactors include temperatures ranging from 2000 to 600°F (930 to 316°C) and pressures ranging from 100 to 1000 psi (6.9 to 69 bar). Hydrogen to hydrocarbon ratios range from 0.1 to 2. See column 2, lines 52-67; column 3, lines 1-7; column 4, lines 58-67; column 5, lines 1-27, column 11, lines 50-67,. column 12, lines 1-5 and 58-67., column 13, lines 1-3, column 14, lines 20-54, and the figure.

The Stine reference does not specifically disclose that the feed is in liquid phase, does not the feed composition or that the feed contains sulfur compounds as claimed, does not disclose the amount of metal on the catalyst as claimed, and does not disclose the specific conditions for each reactor.

The Lyman reference discloses that the olefins to be oligomerized may contain sulfur and

that this sulfur may be removed in a hydrotreating step. See page 4, right column, lines 20-35; page 5, left column, lines 48-61; and page 5, right column, lines 37-48.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by utilizing a liquid feed for the hydrogenation process because it would be expected that the results would be the same or similar when using a vapor feed or a liquid feed because the state of the feed before entering the reactor is not important, but the operation conditions of the hydrogenation is.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by utilizing a sulfur-containing stream because, as shown by Lyman, such feeds can be used to produce the desired products of Stine. By using a sulfur-containing feed, the product would necessarily be desulfurized in the hydrotreating step of Stine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the Stine by using a feed containing the olefin types and amounts as in claim 3 because such a feed falls within the class of feeds disclosed by Stine and therefore would be expected to be effectively treated in the process of Stine.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by using catalyst metal amounts as in claims 5 and 6 because one would use the minimum amount of metal that is effective because noble metals are expensive.

It also would have been obvious to one having ordinary skill in the art at the time the

invention was made to have used conditions as claimed in the process of Stine because such conditions are within the ranges disclosed by Stine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by utilizing a liquid feed for the hydrogenation process because it would be expected that the results would be the same or similar when using a vapor feed or a liquid feed because the state of the feed before entering the reactor is not important, but the operation conditions of the hydrogenation is.

Response to Arguments

The argument that the Stine is silent with regard to the use of trickle bed reactors is not persuasive because the reactors contain a fixed bed of catalyst and as shown in the figure, the reactants flow downward through the catalyst beds. It is clear that these reactors are trickle bed reactors.

The argument that, according to the example of Stine, the reaction is clearly carried out in the vapor phase is not persuasive because the presently claimed process does not claimed that the process is carried out in the liquid phase, but claimed that the feed is in liquid phase.

The argument that Stine is silent with regard to the problems relating to sulfur-containing compounds as well as to the removal to such compounds is not persuasive. The examiner maintains that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by utilizing a sulfur-containing stream because, as shown by Lyman, such feeds can be used to produce the desired products of Stine.

By using a sulfur-containing feed, the product would necessarily be desulfurized in the hydrotreating step of Stine.

The argument that Lyman teaches the use of conventional catalysts and Applicants do not rely the use of such catalysts is not persuasive because the examiner relied upon Lyman to teach that an olefinic stream from an oligomerization process could contain sulfur compounds as claimed. The examiner does not employ the catalyst of Lyman in the process of Stine.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen
Examiner
Art Unit 1764

TN